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ABSTRACT

Two studies evaluated cross cultural perspectives of children's moral and ecological reasoning as well as values about nature. The first study was conducted in Houston, Texas, with an inner city black community. Subjects were 72 children from impoverished families. The results suggested that the serious constraints of living in an inner-city community cannot easily squelch black children's diverse and rich appreciation for nature, and moral responsiveness to its preservation. The second study, conducted in the Brazilian Amazon, is a modification of the Houston study. Subjects were 44 Portuguese fifth-grade children. The results suggested that Brazilian children do not exercise more biocentric reasoning than those in the Houston study. The two studies extend recent research in the moral developmental literature which suggests that, in important ways, individuals' moral reasoning across cultures is similarly structured by concerns for human welfare, fairness, and rights. Inadequate attention to universal aspects of development in general, and morality in particular, would result in missing the many essential ways of being human, and underestimating common humanity. Contains 57 references. (MOK)

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# Bayous and Jungle Rivers:

# Cross Cultural Perspectives on Children's Moral and Ecological Reasoning

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Paper presented at the June 1996 Meeting of the Jean Piaget Society, Philadelphia, in a symposium (organized by H. D. Saltzstein) titled, "Moral Development in Culture: Particular and Universal Ways of Orienting to Morality." Peter H. Kahn, Jr., Education and Human Development, Colby College, Waterville, ME 04901-8844. Electronic mail: phkahn@colby.edu.

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## Bayous and Jungle Rivers:

## Cross Cultural Perspectives on Children's Moral and Ecological Reasoning

I'll begin by sketching a study that a colleague and I conducted in an inner city black community in Houston Texas. Then I'll compare these results to another study that we just conducted in the Brazilian Amazon. Both studies focus on children's moral and ecological reasoning and values about nature. Taking the studies together, I'll suggest that children have a wide range of environmental sensitivities, and that children bring moral reasoning and moral values to bear in their relationship with nature. Moreover, I'm very much drawn to the theme of this symposium: of how to understand particular and universal aspects of children's development. Thus, in describing my research findings, I'll be working both levels. My data from Brazil has also surprised me a little, and I'll talk about how, and offer several possible explanations.

In the Houston study, we interviewed 72 children from an economically impoverished inner-city black community (Kahn & Friedman, 1995). The children were evenly divided across grades 1, 3, and 5. Our interview methodology follows in line with the "clinical" method which was pioneered by Piaget (1929/1960, 1932/1969), and has been elaborated upon by a wide range of current researchers (Damon, 1977; Helwig, 1995; Killen, 1990; Kohlberg, 1984; Laupa, 1991; Miller, 1994; Miller & Bersoff, 1994; Nucci, 1996; Nucci & Turiel, 1993; Saxe, 1990; Smetana, 1995; Tisak, 1986; Turiel, 1983; Turiel, Hildebrandt, & Wainryb, 1991; Wainryb, 1995).

The results from the Houston study suggest that the serious constraints of living in an inner-city community cannot easily squelch black children's diverse and rich appreciation for nature, and moral responsiveness to its preservation. For example, the large majority of the children we interviewed said that animals played an important part in their lives, as did plants and parks/open spaces. Children talked about environmental issues (such as pollution) with their family, and did things to help the environment, such as recycling or picking up garbage. Children judged that polluting a bayou would

have harmful effects on birds, water, insects, people, and landscape aesthetics. Moreover, children said that it would matter to them if each type of harm occurred.

We also analyzed whether children judged the act of throwing garbage in their local bayou as a violation of a moral obligation. We drew here on the domain literature of Turiel (1983), Nucci (1981), Smetana (1983), and others where a moral obligation is assessed, in part, based on the criterion judgments of prescriptivity (e.g., throwing garbage in a bayou is not all right to do), rule contingency, (the act is not all right to do even if the law says it's all right to do), and generalizability (the act is not all right for people in another country to do, even if people in that country do the act). Based on these criterion judgments, and in consort with children's moral justifications, results showed that the majority of the children believed it was morally obligatory not to throw garbage in a bayou. Developmentally, fewer children in grade 1 (68%) compared to grades 3 (91%) and 5 (100%) provided such morally obligatory judgments.

We also began to characterize children' environmental moral reasoning. Table 1 provides a sense of our work. In the broadest perspective, two main forms of environmental reasoning emerged from the data: homocentric and biocentric. Homocentric reasoning appeals to how effects to the environment affect human beings. For example, one child said "[it is wrong to pollute the air because] air pollution goes by and people get sick, and it really bothers me because that could be another person's life." You can see the focus here is on protecting other people's welfare. Other homocentric justification categories included personal interests and aesthetics.

Further down on Table 1 you can see several different forms of biocentric reasoning wherein there is an appeal to a larger ecological community of which humans may be a part, including appeals to the intrinsic value of nature and rights of nature. Here I shall just highlight two ways children established biocentric reasoning. In one way, natural objects (usually animals) were compared directly with humans. For example, on child said: "Bears are like humans, they want to live freely." Another child said, "Fishes, they want to live freely, just like we live freely...They have to live in freedom, because they don't like living in an environment were there is much pollution that they die every day."

Thus an animal's desire ("to live freely") is viewed to be equivalent to that of a human's desire, and because of this direct equivalency children reasoned that animals merit the same moral consideration as do humans.

A second way occurred through establishing indirect compensatory relationships. Here is an example of a 5th grade boy, whom we can call Arnold:

> Fishes, they don't have the same things we have. But they do the same things. They don't have noses, but they have scales to breathe, and they have mouths like we have mouths. And they have eyes like we have eyes. And they have the same co-ordinates we have....A co-ordinate is something like, if you have something different, then I'm going to have something, but its going to be the same. Just going to be different.

Here Arnold struggles, quite eloquently, with the idea of a "co-ordinate" by which he seeks to explain that while animals are in some respects not the same as people (they don't have noses like people do), that in important functions (such as breathing and seeing) they are the same. In other words, this child moves beyond a reciprocity based on directly perceivable and salient characteristics to be able to establish equivalences based on functional properties. In Piagetian terms, Arnold's reasoning could also perhaps be understood as on the cusp of reversibility, involving the simultaneous coordination of operations.

Table 2 reports the percentages of the comparative use of homocentric and biocentric reasoning. As shown, children did not often use biocentric reasoning, although when it was used it was used primarily by the 5th graders. In a few minutes, we will be comparing this finding to our comparable data from Brazil.

From these results (and more that I'm not now highlighting), our study does not support some previous findings by other researchers. Namely, what little relevant research there is has often suggested that black Americans have little interest in and concern for the natural environment (Crenson, 1971; Hershey & Hill, 1977-78; Hohm, 1976; Kellert, 1984; Kellert & Westerfelt, 1983; Kreger, 1973;



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Mitchell, 1979; Ostheimer & Ritt, 1976). Two explanations are typically provided for such findings (see Mohai, 1990, and Taylor, 1989). One explanation, based on Maslow's theory, has been referred to as the "hierarchy of needs" explanation: that people will not have concern about higher-level environmental concerns if their basic needs for food, shelter, and physical security are barely met. A second explanation has been referred to as the "subculture" explanation: that distinct qualities of the black experience -- such as a history of slavery -- have led blacks to ignore if not oppose nature. In the words of the political activist Eldredge Cleaver (1969): "black people learned to hate the land...[and] have come to measure their own value according to the number of degrees they are away from the soil" (pp. 57-58).

On the contrary, our results speak to the importance -- personally and morally -- of nature and environmental issues in the lives of these black children in the inner city. These findings are of a piece with our recent data from black parents in the same community (Kahn & Friedman, 1996). But this is not to say that cultural context does not influence these children's environmental reasoning and values. Sometimes it did in colorful ways. For example, one child said that "those are animals that everyone must take care of...Because God put the animals on earth for people to, like for pet stores, to keep and take care of them." Notice that this child does not say that to take care of animals we should "thank God for wilderness," but, in a sense, "thank God for pet stores." This perspective is not surprising since wide open farm lands and wilderness are not centrally part of this child's experience.

Here is a more poignant example of contextual effects which comes from an interview with a 1st grade girl -- whom we can call Amanda -- who was one of the least environmentally oriented children we interviewed. Early in the interview, Amanda said that she had a pet cat. The interviewer then asked if her cat was important to her. Amanda says: "No. I have other things that's important to me. If I eat or not. Or if anybody in my family is gonna die, because I don't want nobody in my family to die." Here Amanda's reasoning might appear to support the "hierarchy of needs" explanation noted above. Yet on further analysis in the interview, Amanda's stark rejection of animals appears to exist alongside of her attraction to them. Elsewhere says that she liked dogs, that two of her previous dogs had died, and that she wished she could have another one. Or take the issue of parks and open spaces.

On first pass, Amanda rejects them. Amanda never walks anymore in the parks. But why? "Because I used to go, now the people go in there and they be throwing glass and they have guns and stuff and they might shoot me." Amanda never climbs trees. Why? "Cause it's dangerous. Cause if they fall the grass might have glass and then they fall on they face in the glass and then they'll cut their nose or eyes and they'll be blind." Indeed, Amanda does not even like to play in her back yard. Why? "Nothin' can get me. Like a stranger or something." Is it the case that Amanda has no affiliation for animals, plants, and parks/open spaces? Rather, it seems that her economically impoverished and violent surroundings have made nature largely inaccessible.

While not losing sight of contextual effects, an important question remains unanswered. Namely, to what extent might the results from the Houston study reflect universal features of children's development? Toward addressing this question, we conducted another study in the Brazilian Amazon. This was done in collaboration with a student of mine, Dan Howe (Howe, Kahn, & Friedman, in press). We modified the Houston methods, and then Dan interviewed in Portuguese 44 fifth grade children. Two locations were chosen, a city (Manaus) and a small remote village (Novo Ayrao).

With nearly one million inhabitants, Manaus is the largest Brazilian city within the vast Amazon rain forest. The city is located thirteen miles above the junction of the Rio Negro and the Amazon River, and it is at this junction that the Amazon River is said to begin. Manaus services a growing eco-tourist trade from North America and Europe. The city is also considered the center of the region's electronics industry, and it enjoys tax-free imports due to the government's efforts to spur international development in the region. Yet, even given this economic development, a great deal of poverty exists within Manaus, as do poor educational opportunities, jobs, and medical care. In some sections of the city, refuse and litter are readily apparent, and sickness manifests (e.g., cholera, malaria, and yellow fever). The urban children who were interviewed attended a school in Sao Raimundo: a neighborhood of only modest economic means in comparison to the city as a whole. Some of these children, for example, lived near creeks that some people used as their primary means for garbage and

sewage removal. In contrast, Novo Ayrao is a small village with approximately 4000 inhabitants. The village could only be reached by means of an eight hour boat ride up the Rio Negro from Manaus. The villagers' primary economic activities include fishing and the extraction of forest products, most notably lumber. The landscape is largely pristine with only small areas cleared for housing, commerce, and dirt roads. There is little visible litter or garbage; and according to some inhabitants neither crime nor drugs are present in the community. The children who were interviewed attended one of the village's two schools.

The methods largely paralleled those in the Houston study. Although, instead of asking questions that pertained to a "bayou" (as we did in the Houston study) we asked questions that pertained to the Rio Negro. We also asked additional questions to tap children's environmental and moral judgments of the Quemada -- the large-scale logging and burning of the Amazon jungle.

The results surprised us in several ways. First, it was expected that since Brazilian children, particularly in Novo Ayrao, lived closer to nature than their Houston cohorts, that more biocentric reasoning -- which embeds humans in a larger ecological moral community -- would emerge. This hypothesis was not supported. Why? Three explanations are possible. One explanation (recently offered informally to me by Roger Hart at the Graduate School of the City University of New York) is that while the village was accessible only by boat, it was still heavily influenced by the missionary culture. Indeed, by interviewing the children in Portuguese (instead of an indigenous language), the interview was weighted toward eliciting responses imbued with the missionary culture. Hart contends that had an indigenous population of Amazonian children been interviewed that biocentrism would have been present. A second explanation is that biocentric reasoning may have a cultural basis, and does not emerge in every culture that lives close to the land. Diamond (1993), for example, provides anecdotal evidence that indigenous populations in New Guinea, while extremely knowledgeable about nature, demonstrate virtually no biocentric considerations. Third, based on a recent study (Kahn, 1996), it is possible that biocentric reasoning emerges more fully in older adolescents and adults, and that such

reasoning might have been found with an older population in the village where we had conducted our research.

Part of what is at stake in the above developmental analysis is one's very conception of young children's relationship with nature. Often two competing conceptions are offered. One suggests – in almost the tradition of Rousseau – that young children have a deep connection to the natural world which then, in time, gets largely severed by modern society. A second conception suggests that people only develop a deep connection to the natural world, if at all, in adolescence or later.

Indeed, both conceptions may be right. As the above results suggest, young children do not appear to demonstrate biocentric concepts, particularly those which draw on rights, reciprocity, compensatory relationships, and a moral teleos. On this point, our results are in agreement with Kellert (1996) who found that adolescents witness a sharp increase in abstract and conceptual reasoning about the natural world. But Kellert also says that only by adolescence does ethical reasoning about nature emerge, and that it "seems pointless to focus on teaching very young children ecology and ethical responsibilities for conserving nature at a time when they are incapable of internalizing this type of abstract and compassionate thinking" (p. 49). On the contrary, our results show that young children (at least by the ages of six to eight years of age) have moral commitments to nature, albeit often framed in homocentric terms. Moreover, young children (though less often than for older children) view harm to nature as a violation of a moral obligation, based, as defined earlier, on the criteria of prescriptivity, rule contingency, and generalizability.

Yet it is a difficult issue, to be sure. Young children as "deep ecologists"? Maybe yes, maybe no. Part of what makes for such ambivalence is that the problem cuts across two major areas of development: reasoning and values, or more broadly, cognition and affect. Often the structural-developmental project is framed in terms of cognition. Yet, even for Piaget, affect was never divorced from structure. That means more than that emotions can stimulate or retard the development of intellectual operations, though they can. In addition, children reflect on emotions, and through such reflections, emotions provide the "raw material" for the construction of knowledge and principled

reasoning (Arsenio and Lover, 1995). As DeVries and Kohlberg (1987) write: "For Piaget, objects are simultaneously cognitive and affective. An object disappearing behind a screen is at the same time an object of knowledge and a source of interest, amusement, satisfaction, or disappointment" (p. 33). If this is true for physical objects, like a ball, how much more so for the animate world. For a child, a dog can be a source of knowledge (both the dog and the child need to eat to live), and a source of pleasure, comfort, security, playfulness, and companionship.

It is for this reason that in our studies we broadened our analysis to focus not just on people's knowledge, but their values. Sometimes we pursued the distinction directly, as when we asked children whether forms of pollution hurt various parts of nature (knowledge) and also whether the children cared that each type of harm occurred (values). Other times, cognition and affect could not be so easily disassociated from one another. To take a common example, when children reasoned that pollution is wrong because it harms the welfare of animals, the knowledge that animals can get harmed by pollution is essentially linked with the value that one cares about that harm.

The lack of biocentric reasoning in the Brazilian data was not the only surprising finding. Contrary to our expectations, across 26 questions (which formed a large body of both studies), there were only two statistical differences between the black children in the inner city of the United States and Brazilian children in urban and rural parts of the Amazon. Moreover, in a meta-analysis of the data from both studies, there was no statistical difference in their environmental orientation. In addition, the coding system that was used to code the Brazilian children's environmental moral reasoning virtually replicated the system developed in the Houston study, and this system proved robust enough for the task. Indeed, the structure of children's reasoning sometimes almost echoed one another. For illustrative purposes, consider but the following four pair of matched examples:

1A. [It is not all right to throw garbage in the river] because it causes pollution that is dangerous for us. Because now we have cholera, a very dangerous disease and there are others attacking us like the malaria. (Brazilian child)

1B. Because some people that don't have homes, they go and drink out of the rivers and stuff and they could die because they get all of that dirt and stuff inside of their bodies. (Houston child)

Both of the above children reason that is wrong to throw garbage in the local waterway because people might drink from polluted water, and get sick ("now we have cholera, a very dangerous disease"; "they could die").

2A. Because the river was not made to have trash thrown in it, because the river belongs to nature. (Brazilian child)

2B. Because water is what nature made; nature didn't make water to be purple and stuff like that, just one color. When you're dealing with what nature made, you need not destroy it. (Houston child)

Both of the above children base their environmental judgments on the view that nature has its own purposes ("the river was not made to have trash thrown in it"; "nature didn't make water to be purple and stuff").

3A. Because animals have to have their chance. They also must have to live. We should not mistreat them, because if it happens to us, we don't like it. (Brazilian child)

3B. Some people don't like to be dirty. And when they throw trash on the animals, they probably don't like it. So why should the water be dirty and they don't want to be dirty. (Houston child)

Both of the above children judge as wrong the mistreatment of animals based on considering whether humans would similarly like to be treated in that way ("because if it happens to us, we don't like it"; "some people don't like to be dirty...[so the animals] probably don't like it").

4A. Even if the animals are not human beings, for them they are the same as we are, they think like we do. (Brazilian child)

4B. Fish don't have the same things we have. But they do the same things. They don't have noses, but they have scales to breathe, and they have mouths like we have mouths. And they have eyes like we have eyes. (Houston child -- from Arnold quoted earlier)

Both of the above children recognize that while animals are not identical to human beings ("animals are not human beings"; fish don't have the same things we have") that both animals and people have significant functional equivalences (animals "think like we do"; fish "don't have noses, but they have scales to breath").

Taken together, our two studies extend recent research in the moral developmental literature which suggests that in important ways individuals' moral reasoning across cultures is similarly structured by concerns for human welfare, fairness, and rights. This research includes studies conducted in India (Madden, 1992), Nigeria (Hollos, Leis, & Turiel, 1986), Brazil (Biaggio, 1994), the Virgin Islands (Nucci, Turiel, & Encarnacion-Gawrych, 1983), and Korea (Song, Smetana, & Kim, 1987), to name but a few. This is not to say that moral differences between cultures do not exist; but rather that one needs to be careful in understanding such differences, for often they are not differences in morality, per se, but in personal interests, conventional practices, and factual and metaphysical beliefs (Kahn, 1991, 1994, 1995; Smetana, 1995; Turiel, Hildebrandt, & Wainryb, 1991; Turiel, Killen, & Helwig, 1987; Wainryb, 1991, 1993, 1995).

To convey this idea better, and its relation to environmental reasoning, consider Huebner and Garrod's (1991) claim that Tibetan Buddhism "presents profound challenges to those who argue for general applicability of moral reasoning theories originating in Western culture" (p. 341). They illustrate their point by providing a passage from one of their interviews with a Tibetan monk, which I quote in its entirety:

> He [the bug] went under my feet, but he did not die. Now he was suffering, wasn't he? Suffering. I figured that if I left him like that, he would suffer forever, because there was no medicine for him as there is for a human being. So I prayed ... And then I killed him with my hand, the suffering one. Why did I kill him? He was suffering. If I left him, he would suffer. So

> it was better for him not to suffer any longer. That's why I killed him. And I prayed ... that one day in the next life, he would become a man like me, who can understand Buddhism and who will be a great philosopher in Tibet. (p. 345)

Huebner and Garrod say that "such sensitivity to the nonhuman world leads to moral dilemmas not likely considered in Western culture" (p. 345). Granted, unlike most Westerners, the Buddhist monk interviewed by Huebner and Garrod advances metaphysical assumptions about karma. But differences in metaphysical assumptions should not blind us to common moral experiences. Have not many of us experienced moral qualms very similar to this Buddhist monk – stepping by mistake on ants or caterpillars, and feeling remorse? The Tin Man in the Wizard of Oz does; and his heart-felt extension of sympathy to the small animals beneath his feet speaks clearly to Western audiences. More formally, such sensitivity to the nonhuman world receives attention from Western political activists (the "animal rights" movement) and philosophers (Regan, 1983; Spiegel, 1988; Stone, 1986). Such sensitivity was also clearly evident in the children we interviewed in both Brazil and the United States.

Thus our two studies suggest that some potentially universal features of children's moral reasoning may extend to the larger biotic community. If correct, the developmental mechanisms remain to be understood. It may be, for example, that there are inherent aspects of nature itself which help give rise to children's environmental constructions. If so, nature is not a mere cultural convention or artifact, as some cultural theorists suggest, but part of a reality that bounds children's cognition (Soule & Lease, 1995). There is also increasing evidence based on evolutionary theory that humans have a complex range of genetic predispositions toward nature, ranging from aversion to deep emotional affiliations (Wilson, 1984; Kellert & Wilson, 1993). Future work might profit by seeking to dovetail constructivism with a non-reductionistic form of evolutionary biology (Kahn, 1996).

## Conclusion

As I noted earlier, I'm drawn to the theme of this symposium. For I think it is important to analyze both particular and universal features of children's moral development, and to work both levels

together. I've tried to do so this morning while describing two of my studies on children's moral and ecological reasoning.

This symposium's theme also goes some small distance to check what I take to be a trend in the psychological fields. Namely, many cultural psychologists, sociohistorical psychologists, hermeneuticists, activity theorists, postmodern theoriests, and others of similar bent have increasingly focused on articulating cultural variation, on what Shweder (1990) calls "ethnic divergences in mind, self, and emotion" (p. 1). Thus we often hear, for example, about local and contextual knowledge, and local culturally constituted functional systems, and so forth. Which is fine, but only up to a point. That is, my concern is that such theories do not readily have within them the means to recognize -- when encountered -- not only the particular but universal. If that is true, it's unfortunate. For by not paying adequate attention to universal aspects of development in general, and morality in particular, we miss many of the essential ways of being human, and underestimate our common humanity.

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TABLE 1

SUMMARY OF ENVIRONMENTAL JUSTIFICATION CATEGORIES

| | |
|---|---|
| **1. Homocentric** | **An appeal to how effects to the environment affect human beings. In other words, the environment is given consideration, but this consideration occurs only because harm to the environment causes harm to people.** |
| A. Personal interests | An appeal to personal interests and projects of self and others, including those that involve recreation or provide fun, enjoyment, or satisfaction (e.g., "[Animals are important to me because] if I go hunting, that's an important part of my life because it'll be fun to me"; "Animals matter to me a little bit because we need more pets and different animals to play with"). |
| B. Aesthetic | An appeal to preservation of the environment for the viewing or experiencing pleasure of humans (e.g., "The bayou should look beautiful because if my relatives come over, I could take them to the bayou and show them how beautiful it is and clean"; "because I'd get to see all the colors of the plants and the beauty of the whole—of the whole natural plants"). |
| C. Welfare | An appeal to the physical, material, and psychological welfare of human beings, including that of agent (e.g., "because if the water is dirty, I might get sick"), of others (e.g., "air pollution goes by and people get sick, it really bothers me because that could be another person's life"), and of society (e.g., "it's wrong to destroy nature because nature will be good for all human kind"). |
| D. Interpersonal condemnation | An appeal to how others would judge the actor(s) negatively for both personal contexts (e.g., "they'd probably lose their friendship with everyone") and publicly (e.g., "harming the environment is wrong because the people in town will get really mad, no one will like these people if they do that"). |
| E. Punishment avoidance | An appeal to punishment or its avoidance (e.g., "because the police might catch her"). |
| F. Influencing others | An appeal to the act's influence on others, with a consequentialist orientation (e.g., "because if a group of people throw theirs in there then a lot more other people will hear about it and they probably will take their trash and throw it in there"). |
| G. Unelaborated | |
| **2. Biocentric** | **An appeal to a larger ecological community of which humans may be a part.** |
| A. Intrinsic value of nature | An appeal that nature has value, and the validity of that value is not derived solely from human interests, including is-to-ought appeals (e.g., "if nature made birds, nature does not want to see birds die"; "I think people should care about animals because animals are like part of everyone's life"; "it was here before mankind arrived here"). |
| B. Rights | An appeal that nature has rights or deserves respect, including appeals wherein humans and nature are viewed as essentially similar (e.g., "fishes, they want to live freely, just like we live freely, they have to live in freedom, because they don't like living in an environment where there is so much pollution that they die every day"; "animals don't need to be killed either, because they need the same respect that we need"), and set in a compensatory relation (e.g., "Fishes [deserve respect for while they] don't have the same things we have, they do the same things. They don't have noses, but they have scales to breathe, and they have mouths like we have mouths. It's going to be the same, just going to be different"). |



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TABLE 1 (Continued)

| | |
|---|---|
| C. Relational | An appeal to a relationship between humans and nature, including those based on psychological rapport (e.g., "animals are important to me because when a person in my family like died, they could come and cheer me up"), personal caretaking (e.g., "I have a dog and he's like my child or something, I take care of him"), and stewardship (e.g., "Those are animals that everyone must take care of, because God put these animals on earth for people to, like for pet stores, to keep and take care of them"). |

3. Unelaborated Harm to Nature

An appeal to the welfare of nature, including animals (e.g., air pollution is bad because "the birds and the butterflies, they can't hardly get any air, and it'll probably kill them"), and plants (e.g., "air pollution could kill the flowers and the trees, and the grass and stuff"). No reference is made to whether that concern derives from a homocentric or biocentric orientation.



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TABLE 2

PERCENTAGES OF ENVIRONMENTAL JUSTIFICATIONS BY CATEGORIES

| | Play an Important Part in Your Life | | | | Case of the Polluted Bayou | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | In Your Neighborhood | | In Another Place, Far Away | | |
| Justification Category | Animals | Plants | Parks/Open Spaces | Individual | Individual: Given the Common Practice to Pollute | Community: Given the Common Practice to Pollute | Individual: Given the Common Practice Not to Pollute | Individual: Given the Common Practice to Pollute | Community: Given the Common Practice to Pollute |
| **Homocentric:** | | | | | | | | | |
| Personal interests | 40 | 14 | 86 | 10 | 7 | 8 | 2 | 5 | 3 |
| Aesthetic | 4 | 23 | 0 | 19 | 23 | 18 | 19 | 11 | 23 |
| Welfare | 31 | 51 | 11 | 26 | 23 | 26 | 20 | 35 | 25 |
| Interpersonal condem. | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 1 | 1 |
| Punishment avoidance | 0 | 0 | 0 | 7 | 13 | 9 | 9 | 6 | 2 |
| Influencing others | 0 | 0 | 0 | 2 | 6 | 2 | 16 | 7 | 8 |
| Unelaborated | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| **Biocentric:** | | | | | | | | | |
| Intrinsic value of nature | 0 | 0 | 0 | 2 | 0 | 1 | 2 | 1 | 1 |
| Rights | 4 | 2 | 0 | 2 | 0 | 2 | 2 | 4 | 0 |
| Relational | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Unelaborated harm to nature | 15 | 6 | 2 | 33 | 27 | 32 | 23 | 30 | 34 |

NOTE.—Percentages may not equal 100 due to rounding.



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